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10/727,941

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Antonio Gutierrez

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EXAMINER

LANG, AMY T

ART UNIT

PAPER NUMBER

1714

DATE MAILED: 06/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/727,941

Applicant(s)

GUTIERREZ ET AL.

Examiner

Amy T. Lang

Art Unit

1714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☒ Claim(s) 1 and 4 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. ____.  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>04-04-2005</u> .  | 6) <input type="checkbox"/> Other: ____.                                    |

## **DETAILED ACTION**

### ***Specification***

1. The disclosure is objected to because of the following informalities: page 2, line 28 and page 4 line 2 include the phrase "at least one the nitrogen-containing," which is confusing in context; page 8, line 23 includes "and each are is," which is also incorrect in context.

Appropriate correction is required.

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

### ***Claim Objections***

3. Claim1 is objected to because of the following informalities: Claim 1 states a "Group I, Group II Group III mineral oil," where it is the examiner's position that proper format would read 'Group I, Group II, or Group III mineral oil.' Appropriate correction is required.

3. Claim 4 is objected to because of the following informalities: Claim 4 states a "composition of claim2," where a space is missing in the phrase. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention. 0

5. Claims 1 and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 8 state "a minor amount of dispersant comprising one or more nitrogen-containing dispersants that are the reaction product of a polyalkenyl-substituted mono- or dicarboxylic acid, anhydride or ester and a polyamine." However, it is the examiner's position that this phrasing is confusing. First of all, it is unclear as to whether only the carboxylic acid is polyalkenyl-substituted or if the carboxylic acid, anhydride, and ester are all polyalkenyl-substituted. Secondly, it is unclear as to what is reacted to form the reaction product. In one respect, the carboxylic acid, either the anhydride or ester, and a polyamine are all reacted. In another respect, either the carboxylic acid, anhydride, or ester is reacted with the polyamine.

6. Claims 1 and 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 14 disclose a polyalkenyl moiety having "from about 1.3 to 1.7 mono- or dicarboxylic acid producing moieties per polyalkenyl moiety." However, it is the examiner's position that this ratio is unclear since the applicant does not clarify if the

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dicarboxylic acid groups are viewed as a single moiety or two separate moieties in the ratio. Thus the applicant should explain what is regarded a moiety to further clarify the claimed ratio.

7. Claims 4 and 12 recite the limitation "total amount of diaryl amine moieties" in lines 1 and 2 of the claims. However, the claims from which claims 4 and 12 depend do not disclose a diaryl amine moiety. Therefore, there is insufficient antecedent basis for this limitation in the claim.

8. Claim 19 recites the limitation "said engine" in line 2 of the claim. However, claim 1, from which claim 19 is dependent, does not state an engine. Therefore, there is insufficient antecedent basis for this limitation in the claim.

9. Claim 20 recites the limitation "said diesel engine" in line 1 of the claim. However, claim 19, from which claim 20 is dependent, does not state a diesel engine. Therefore, there is insufficient antecedent basis for this limitation in the claim.

### ***Double Patenting***

10. Nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140

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F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

11. Claims 1, 2, 5, 6-10, 13-15, and 19-22 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-5, 10, 11, and 16-21 of U.S. Patent No. 6,869,919 B2 (Ritchie). Although the conflicting claims are not identical, they are not patentably distinct from each other because of the following explanation.

US '919 discloses a lubricating oil composition utilized in diesel engines with an exhaust gas recirculation system. The composition comprises an olefin copolymer containing alkyl or aryl amine, or amide groups, or nitrogen containing heterocyclic groups or ester linkages. US '919 also discloses a nitrogen containing dispersant in the composition where the dispersant contributes from 0.10 to 0.18 wt. % of nitrogen to the lubricating oil composition.

Applicants' attention is drawn to MPEP 804 where it is disclosed that "the specification can always be used as a dictionary to learn the meaning of a term in a patent claim." *In re Boylan*, 392 F.2d 1017, 157 USPQ 370 (CCPA 1968). Further, those portions of the specification which provide support for the patent claims may also be

examined and considered when addressing the issue of whether a claim in an application defines an obvious variation of an invention claimed in the patent.

(underlining added by examiner for emphasis) *In re Vogel*, 422 F.2d 438,164 USPQ 619,622 (CCPA 1970).

Consistent with the above underlined portion of the MPEP citation, attention is drawn to where US '919 discloses the dispersant as a polyalkenyl-substituted mono- or dicarboxylic acid, ester, or anhydride reacted with polyamines (column 7, line 49 through column 8, line 9; column 11, line 59 through column 12, line 5). The polyalkenyl moiety has an Mw/Mn value of 1.5 to 2.0 (column 8, lines 28-36). Furthermore, US '919 discloses the dispersant as ashless, which therefore contains a sulfated ash content less than 0.5 wt. % (column 7, lines 52-54).

Claim 2 of US '919 discloses the polyalkenyl moiety of the dispersant with an average molecular weight from 1500 to 3000. Although US '919 does not disclose the ratio of mono- or dicarboxylic acid producing moieties per polyalkenyl moiety, it would have been obvious to use any moiety ratio including ones instantly claimed absent any showing of unexpected or surprising results.

Consistent with the above underlined portion of the MPEP citation, attention is also drawn to where US '919 further discloses the lubricating oil composition as a Group I, II, or III base stock (column 4, lines 44-46).

Furthermore, claim 18 of US '919 discloses the lubricating oil composition with 6 to 50 mmoles or phenate surfactant per kilogram of lubricating oil. Since US '919 does not specify the boron content in the dispersant, it is obvious that the content is zero.

Additionally, US '919 does not specify the chlorine content, and only discloses the use of chlorine in one embodiment, therefore it would have been obvious to make the content zero.

12. Claims 1, 2, 5, 6-10, 13-15, and 19-22 are directed to an invention not patentably distinct from claims 1-5, 10, 11, and 16-21 of commonly assigned US 6,869,919 B2 (Ritchie). Specifically, although the copending claims are not identical, they are not patentably distinct for the reasons set forth in paragraph 11 above.

13. The U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP Chapter 2300). Commonly assigned US 6,869,919 discussed above, would form the basis for a rejection of the noted claims under 35 U.S.C. 103(a) if the commonly assigned case qualifies as prior art under 35 U.S.C. 102(e), (f) or (g) and the conflicting inventions were not commonly owned at the time the invention in this application was made. In order for the examiner to resolve this issue, the assignee can, under 35 U.S.C. 103(c) and 37 CFR 1.78(c), either show that the conflicting inventions were commonly owned at the time the invention in this application was made, or name the prior inventor of the conflicting subject matter.

A showing that the inventions were commonly owned at the time the invention in this application was made will preclude a rejection under 35 U.S.C. 103(a) based upon



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the commonly assigned case as a reference under 35 U.S.C. 102(f) or (g), or 35 U.S.C. 102(e) for applications pending on or after December 10, 2004.

***Claim Rejections - 35 USC § 102***

14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

15. Claims 1, 2, 5, 6-10, 13-15, and 19-22 are rejected under 35 U.S.C. 102(e) as being anticipated by Ritchie (US 6,869,919).

The applied reference has a common Inventor with the instant application.

Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

For explanation of the rejection, see paragraph 11 above.

***Claim Rejections - 35 USC § 103***

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

18. Claims 1-4, 6-12, 14-16, 19, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carrick (US 6,583,092 B1) in view of Nalesnik (US 5,207,938).

It is the examiner's position that instant claims 1 and 8 are to be examined where the carboxylic acid, anhydride, and ester are all polyalkenyl-substituted, and where either the carboxylic acid, anhydride, or ester is reacted with the polyamine. Also, claims 1 and 14 are to be examined where the dicarboxylic acid groups are viewed as a two separate moieties in the ratio of carboxylic acid producing moieties per polyalkenyl moiety.

Carrick discloses a lubricating oil composition for diesel engines (column 1, line 5; column 4, lines 25-35). The composition is comprised of Groups I, II, and III mineral oil base stocks, dispersants and viscosity index improvers (column 4, lines 37-52).

Carrick discloses the dispersants as a hydrocarbon substituted succinic acid or anhydride reacted with a polyamine, where succinic acid is a dicarboxylic acid (column 15, lines 1-32; column 16, lines 42-47; column 17, lines 30-33). The hydrocarbon substituent groups are derived from a polyalkene, specifically polyisobutene (column 17, lines 4-14). The polyalkene has a molecular weight from 700 to 2000 and a molecular weight distribution (Mw/Mn) from about 1.5 to about 5 (column 16, lines 52-59). Furthermore, the ratio of succinic groups to polyalkene substituents groups is disclosed as 0.9 to 2.5, which clearly overlaps the claimed moiety ratio from 1.3 to 1.7 (column 16, lines 47-52).

The nitrogen containing dispersant disclosed by Carrick is present in the lubricating composition at a concentration up to about 10% by weight (column 20, lines 55-61). Therefore, it is obvious for the wt. % of nitrogen from the dispersant to be greater than 0.08 wt. %. Furthermore, Carrick teaches the lubricating composition having a sulfur content no more than 0.02 wt. %, an ash content from 0.3 to 1.0 wt. %, and a chlorine content up to about 50 ppm, which is essentially chlorine-free (column 4, lines 3-24). Therefore, the dispersant must also contain the same ranges of elements as the lubricating oil.

The viscosity index improvers are disclosed in the composition as olefin copolymers, specifically a polymer of ethylene-propylene, grafted with maleic anhydride and then derivatized with an amine (column 23, lines 15-26). However, Carrick is silent as to the specific amine utilized.

Nalesnik discloses a viscosity index improver that is an olefin copolymer grafted with maleic anhydride and then derivatized with an amine, specifically the diaryl amine N-phenyl phenylene diamine. The mmole content of the diaryl amine is disclosed as 5.9 mmol (Example I, column 5). The total weight of the viscosity index improver is .2881 kg, and the viscosity index improver is added to a lubricating oil in an amount of 5 wt. % (Example I, column 5; Example IX, column 6, lines 33-34; column 2, lines 1-10). Therefore, the total amount of diaryl amine moieties in the lubricating oil composition is 1.02 wt. % ( $5.9\text{mmol}/.2881\text{kg} * .05\text{wt}\%$ ). It therefore would have been obvious for Carrick to use an aryl amine, such as N-phenyl phenylene diamine since it is common in the production of viscosity index improvers. Furthermore, Carrick discloses the olefin copolymer, from which the amine moieties are derived, with a molecular weight greater than 20,000, which clearly overlaps the instant claims 4 and 12. Therefore, one of ordinary skill would thereby obtain the invention as set forth in the presently cited.

19. Claims 5 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carrick (US 6,583,092 B1) in view of Nalesnik (US 5,207,938) and Locke (US 6,784,143 B2).

Carrick, as stated in paragraph 18 is incorporated here by reference, discloses a lubricating composition comprised of mineral oil, dispersants, and viscosity index improvers. Furthermore, Carrick discloses calcium phenate as a detergent additive to the composition (Table, column 27, line 55; column 25, lines 49-57).

Nalesnik, as stated in paragraph 18 is incorporated here by reference, discloses a lubricating composition comprised of diaryl amines reacted in a viscosity index improver.

Locke also discloses a lubricating oil composition for diesel engines (column 1, lines 3-8). Furthermore, the composition is comprised of Group I, II, or III mineral base stock mineral oil, dispersants, and viscosity index improvers (column 6, lines 36-38). The dispersants are disclosed as hydrocarbyl-substituted carboxylic acids reacted with a polyamine, where the substituent is polyisobutene (column 12, line 50 through column 13, line 5). The viscosity index improvers are polymers of ethylene-propylene grafted with maleic anhydride and then derivatized with an amine (column 13, lines 14-40). Therefore, the compositions disclosed by Carrick and Locke are very similar in composition.

Locke also discloses a calcium phenate-based detergent in amounts of 10 to 15 mmol of surfactant per kilogram of the oil composition, which clearly overlaps the instant claims 5 and 13 (column 11, line 62 through column 12, line 3). It therefore would have been obvious for Carrick to use the disclosed calcium phenate detergent in the content disclosed by Locke, since both lubricating compositions are very similar. Therefore, one of ordinary skill would thereby obtain the invention as set forth in the presently cited.

20. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Carrick (US 6,583,092 B1) in view of Nalesnik (US 5,207,938) and Mishra (US 6,753,381 B1).

Carrick, as stated in paragraph 18 is incorporated here by reference, discloses a lubricating composition comprised of mineral oil, dispersants, and viscosity index improvers. However, Carrick does not disclose the method by which the olefin molecule is derived.

Nalesnik, as stated in paragraph 18 is incorporated here by reference, discloses a lubricating composition comprised of diaryl amines reacted in a viscosity index improver.

Mishra teaches that it is common in the lubricant art to produce amorphous ethylene-propylene copolymer viscosity index improvers (column 3, lines 26-42). These copolymers are produced by simultaneously blending and shearing using conventional processing equipment (column 3, lines 13-20). The viscosity index improvers also consist of a blend of amorphous ethylene-propylene copolymers and semi-crystalline ethylene-propylene copolymers (column 6, lines 34-40). Furthermore, the copolymers are functionalized with graft monomers of maleic anhydride. Mishra also discloses copolymers that were sheared and blended with a SSI of 18.89 so that it would have been obvious to produce copolymers grafted with maleic anhydride with the same SSI value (column 8, lines 40-52). It therefore would have been obvious to produce the viscosity index improvers disclosed by Carrick by the known method disclosed by Mishra. Therefore, one of ordinary skill would thereby obtain the invention as set forth in the presently cited.

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21. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Carrick (US 6,583,092 B1) in view of Nalesnik (US 5,207,938), Mishra (US 6,753,381 B1), and Ver Strate (US 4,804,794).

Carrick, as stated in paragraph 18 is incorporated here by reference, discloses a lubricating composition comprised of mineral oil, dispersants, and viscosity index improvers. However, Carrick does not disclose the method by which the olefin molecule is derived.

Nalesnik, as stated in paragraph 18 is incorporated here by reference, discloses a lubricating composition comprised of diaryl amines reacted in a viscosity index improver.

Mishra, as stated in paragraph 20 is incorporated here by reference, discloses a viscosity index improver produced by shearing and functionalizing copolymers. However, Mishra does disclose using conventional processing equipment to produce the copolymers, but does not specifically disclose a tubular reactor.

Ver Strate discloses that it is known in the art to use a tubular reactor to produce ethylene-propylene copolymers (column 2, lines 29-35). Copolymers formed by this method vary along their chain length, and therefore have a tapered structure. It therefore would have been obvious to produce the ethylene-propylene copolymers disclosed by Mishra with a tubular reactor. Therefore, one of ordinary skill would thereby obtain the invention as set forth in the presently cited.

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22. Claims 20 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carrick (US 6,583,092 B1) in view of Nalesnik (US 5,207,938) and Ueda (US 4,286,567).

Carrick, as stated in paragraph 18 is incorporated here by reference, discloses a diesel engine lubricating composition comprised of mineral oil, dispersants, and viscosity index improvers. Furthermore, Carrick discloses calcium phenate as a detergent additive to the composition (Table, column 27, line 55; column 25, lines 49-57).

Nalesnik, as stated in paragraph 18 is incorporated here by reference, discloses a lubricating composition comprised of diaryl amines reacted in a viscosity index improver.

Ueda discloses that diesel engines commonly have an exhaust gas recirculation system (column 3, lines 23-25). It therefore would have been obvious to use the composition disclosed by Carrick in a diesel engine with an exhaust gas recirculation system. Therefore, one of ordinary skill would thereby obtain the invention as set forth in the presently cited.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amy T. Lang whose telephone number is 571-272-9057. The examiner can normally be reached on M-F 8:30am-5:00pm.



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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ATL

06/20/2006

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